# SEQUENCE LISTING

<110> Luiten, Rosalie
Boon-Falleur, Thierry
van der Bruggen, Pierre
Stroobant, Vincent
Demotte, Nathalie
Schultz, Erwin

<120> MAGE ANTIGENIC PEPTIDES WHICH BIND HLA-B35 AND HLA-B44

<130> L0461/7104

<140> US 09/766,889

<141> 2001-01-19

<150> US 60/177,242

<151> 2000-01-20

<150> US 60/243,212

<151> 2000-10-25

<160> 59

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 930
<212> DNA
<213> Homo sapiens

<400> 1

atgtctcttg agcagaggag tctgcactgc aagcctgagg aagcccttga ggcccaacaa 60
gaggccctgg gcctggtgtg tgtgcaggct gccacctcct cctcctctcc tctggtcctg 120
ggcaccctgg aggaggtgcc cactgctggg tcaacagatc ctccccagag tcctcaggga 180
gcctccgcct ttcccactac catcaacttc actcgacaga ggcaacccag tgagggttcc 240
agcagccgtg aagaggaggg gccaagcacc tcttgtatcc tggagtcctt gttccgagca 300
gtaatcacta agaaggtggc tgatttggtt ggttttctgc tcctcaaata tcgagccagg 360
gagccagtca caaaggcaga aatgctggag agtgtcatca aaaattacaa gcactgtttt 420
cctgagatct tcggcaaagc ctctgagtcc ttgcagctgg tctttggcat tgacgtgaag 480
gaagcagacc ccaccggcca ctcctatgtc cttgtcacct gcctaggtct ctcctatgat 540
ggcctgctgg gtgataatca gatcatgccc aagacaggct tcctgataat tgtcctggtc 600
atgattgcaa tggagggcgg ccatgctcct gaggaggaaa tctgggagga gctgagtgtg 660
atggaggtgt atgatgggag ggagcacagt gcctatgggg agcccaggaa gctgctcacc 720
caagatttgg tgcaggaaaa gtacctggag taccggcagg tgccggacag tgatcccgca 780
cgctatgagt tcctgtgggg tccaagggcc ctcgctgaaa ccagctatgt gaaagtcctt 840
gagtatgtga tcaaggtcag tgcaagagtt cgctttttct tcccatccct gcgtgaagca 900
gctttgagag aggaggaaga gggagtctga 930

<210> 2
<211> 309
<212> PRT

<213> Homo sapiens

<400> 2

```
Met Ser Leu Glu Gln Arg Ser Leu His Cys Lys Pro Glu Glu Ala Leu
 1               5                  10                  15
Glu Ala Gln Gln Glu Ala Leu Gly Leu Val Cys Val Gln Ala Ala Thr
            20                  25                  30
Ser Ser Ser Ser Pro Leu Val Leu Gly Thr Leu Glu Glu Val Pro Thr
        35                  40                  45
Ala Gly Ser Thr Asp Pro Pro Gln Ser Pro Gln Gly Ala Ser Ala Phe
    50                  55                  60
Pro Thr Thr Ile Asn Phe Thr Arg Gln Arg Gln Pro Ser Glu Gly Ser
65                  70                  75                  80
Ser Ser Arg Glu Glu Glu Gly Pro Ser Thr Ser Cys Ile Leu Glu Ser
                85                  90                  95
Leu Phe Arg Ala Val Ile Thr Lys Lys Val Ala Asp Leu Val Gly Phe
            100                 105                 110
Leu Leu Leu Lys Tyr Arg Ala Arg Glu Pro Val Thr Lys Ala Glu Met
        115                 120                 125
Leu Glu Ser Val Ile Lys Asn Tyr Lys His Cys Phe Pro Glu Ile Phe
    130                 135                 140
Gly Lys Ala Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys
145                 150                 155                 160
Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val Thr Cys Leu Gly
                165                 170                 175
Leu Ser Tyr Asp Gly Leu Leu Gly Asp Asn Gln Ile Met Pro Lys Thr
            180                 185                 190
Gly Phe Leu Ile Ile Val Leu Val Met Ile Ala Met Glu Gly Gly His
        195                 200                 205
Ala Pro Glu Glu Glu Ile Trp Glu Glu Leu Ser Val Met Glu Val Tyr
    210                 215                 220
Asp Gly Arg Glu His Ser Ala Tyr Gly Glu Pro Arg Lys Leu Leu Thr
225                 230                 235                 240
Gln Asp Leu Val Gln Glu Lys Tyr Leu Glu Tyr Arg Gln Val Pro Asp
                245                 250                 255
Ser Asp Pro Ala Arg Tyr Glu Phe Leu Trp Gly Pro Arg Ala Leu Ala
            260                 265                 270
Glu Thr Ser Tyr Val Lys Val Leu Glu Tyr Val Ile Lys Val Ser Ala
        275                 280                 285
Arg Val Arg Phe Phe Phe Pro Ser Leu Arg Glu Ala Ala Leu Arg Glu
    290                 295                 300
Glu Glu Glu Gly Val
305
```

<210> 3
<211> 31
<212> DNA
<213> Homo sapiens

<400> 3

```
aaactgcaga tgtctcttga gcagaggagt c                                  31
```

<210> 4
<211> 30
<212> DNA
<213> Homo sapiens

<400> 4
aaactgcagt cagactccct cttcctcctc 30

<210> 5
<211> 12
<212> PRT
<213> Homo sapiens

<400> 5
Glu Ala Asp Pro Thr Gly His Ser Tyr Val Leu Val
1 5 10

<210> 6
<211> 10
<212> PRT
<213> Homo sapiens

<400> 6
Asp Pro Thr Gly His Ser Tyr Val Leu Val
1 5 10

<210> 7
<211> 9
<212> PRT
<213> Homo sapiens

<400> 7
Asp Pro Thr Gly His Ser Tyr Val Leu
1 5

<210> 8
<211> 9
<212> PRT
<213> Homo sapiens

<400> 8
Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5

<210> 9
<211> 10
<212> PRT
<213> Homo sapiens

<400> 9
Lys Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

<210> 10
<211> 8
<212> PRT
<213> Homo sapiens

<400> 10
Ala Asp Pro Thr Gly His Ser Tyr
1 5

<210> 11
<211> 72
<212> DNA
<213> Homo sapiens

<400> 11
atgtctgagt ccttgcagct ggtctttggc attgacgtga aggaagcaga ccccaccggc 60
cactcctatt ga 72

<210> 12
<211> 23
<212> PRT
<213> Homo sapiens

<400> 12
Met Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys Glu Ala
1 5 10 15
Asp Pro Thr Gly His Ser Tyr
20

<210> 13
<211> 33
<212> DNA
<213> Homo sapiens

<400> 13
atggaagcag accccaccgg ccactcctat tga 33

<210> 14
<211> 10
<212> PRT
<213> Homo sapiens

<400> 14
Met Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

<210> 15
<211> 30
<212> DNA
<213> Homo sapiens

<400> 15
atggcagacc ccaccggcca ctcctattga 30

<210> 16
<211> 9
<212> PRT
<213> Homo sapiens

<400> 16
Met Ala Asp Pro Thr Gly His Ser Tyr
1 5

<210> 17
<211> 9
<212> PRT

<213> Homo sapiens

<400> 17
Ser Ala Tyr Gly Glu Pro Arg Lys Leu
1 5

<210> 18
<211> 9
<212> PRT
<213> Homo sapiens

<400> 18
Glu Val Asp Pro Ile Gly His Leu Tyr
1 5

<210> 19
<211> 9
<212> PRT
<213> Homo sapiens

<400> 19
Phe Leu Trp Gly Pro Arg Ala Leu Val
1 5

<210> 20
<211> 10
<212> PRT
<213> Homo sapiens

<400> 20
Met Glu Val Asp Pro Ile Gly His Leu Tyr
1 5 10

<210> 21
<211> 9
<212> PRT
<213> Homo sapiens

<400> 21
Ala Ala Arg Ala Val Phe Leu Ala Leu
1 5

<210> 22
<211> 8
<212> PRT
<213> Homo sapiens

<400> 22
Tyr Arg Pro Arg Pro Arg Arg Tyr
1 5

<210> 23
<211> 10
<212> PRT
<213> Homo sapiens

<400> 23

Ser Pro Ser Ser Asn Arg Ile Arg Asn Thr
1 5 10

<210> 24
<211> 9
<212> PRT
<213> Homo sapiens

<400> 24
Val Leu Pro Asp Val Phe Ile Arg Cys
1 5

<210> 25
<211> 10
<212> PRT
<213> Homo sapiens

<400> 25
Val Leu Pro Asp Val Phe Ile Arg Cys Val
1 5 10

<210> 26
<211> 9
<212> PRT
<213> Homo sapiens

<400> 26
Glu Glu Lys Leu Ile Val Val Leu Phe
1 5

<210> 27
<211> 9
<212> PRT
<213> Homo sapiens

<400> 27
Glu Glu Lys Leu Ser Val Val Leu Phe
1 5

<210> 28
<211> 10
<212> PRT
<213> Homo sapiens

<400> 28
Ala Cys Asp Pro His Ser Gly His Phe Val
1 5 10

<210> 29
<211> 10
<212> PRT
<213> Homo sapiens

<400> 29
Ala Arg Asp Pro His Ser Gly His Phe Val
1 5 10

<210> 30
<211> 9
<212> PRT
<213> Homo sapiens

<400> 30
Ser Tyr Leu Asp Ser Gly Ile His Phe
1 5

<210> 31
<211> 9
<212> PRT
<213> Homo sapiens

<400> 31
Ser Tyr Leu Asp Ser Gly Ile His Ser
1 5

<210> 32
<211> 9
<212> PRT
<213> Homo sapiens

<400> 32
Met Leu Leu Ala Val Leu Tyr Cys Leu
1 5

<210> 33
<211> 9
<212> PRT
<213> Homo sapiens

<400> 33
Tyr Met Asn Gly Thr Met Ser Gln Val
1 5

<210> 34
<211> 9
<212> PRT
<213> Homo sapiens

<400> 34
Ala Phe Leu Pro Trp His Arg Leu Phe
1 5

<210> 35
<211> 9
<212> PRT
<213> Homo sapiens

<400> 35
Ser Glu Ile Trp Arg Asp Ile Asp Phe
1 5

<210> 36
<211> 9
<212> PRT

<213> Homo sapiens

<400> 36
Tyr Glu Ile Trp Arg Asp Ile Asp Phe
1 5

<210> 37
<211> 15
<212> PRT
<213> Homo sapiens

<400> 37
Gln Asn Ile Leu Leu Ser Asn Ala Pro Leu Gly Pro Gln Phe Pro
1 5 10 15

<210> 38
<211> 15
<212> PRT
<213> Homo sapiens

<400> 38
Asp Tyr Ser Tyr Leu Gln Asp Ser Asp Pro Asp Ser Phe Gln Asp
1 5 10 15

<210> 39
<211> 10
<212> PRT
<213> Homo sapiens

<400> 39
Glu Ala Ala Gly Ile Gly Ile Leu Thr Val
1 5 10

<210> 40
<211> 9
<212> PRT
<213> Homo sapiens

<400> 40
Ala Ala Gly Ile Gly Ile Leu Thr Val
1 5

<210> 41
<211> 9
<212> PRT
<213> Homo sapiens

<400> 41
Ile Leu Thr Val Ile Leu Gly Val Leu
1 5

<210> 42
<211> 9
<212> PRT
<213> Homo sapiens

<400> 42

Lys Thr Trp Gly Gln Tyr Trp Gln Val
1 5

<210> 43
<211> 9
<212> PRT
<213> Homo sapiens

<400> 43
Ile Thr Asp Gln Val Pro Phe Ser Val
1 5

<210> 44
<211> 9
<212> PRT
<213> Homo sapiens

<400> 44
Tyr Leu Glu Pro Gly Pro Val Thr Ala
1 5

<210> 45
<211> 10
<212> PRT
<213> Homo sapiens

<400> 45
Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu
1 5 10

<210> 46
<211> 10
<212> PRT
<213> Homo sapiens

<400> 46
Val Leu Tyr Arg Tyr Gly Ser Phe Ser Val
1 5 10

<210> 47
<211> 9
<212> PRT
<213> Homo sapiens

<400> 47
Leu Tyr Val Asp Ser Leu Phe Phe Leu
1 5

<210> 48
<211> 12
<212> PRT
<213> Homo sapiens

<400> 48
Lys Ile Ser Gly Gly Pro Arg Ile Ser Tyr Pro Leu
1 5 10

<210> 49
<211> 9
<212> PRT
<213> Homo sapiens

<400> 49
Tyr Met Asp Gly Thr Met Ser Gln Val
1 5

<210> 50
<211> 11
<212> PRT
<213> Homo sapiens

<400> 50
Ser Leu Leu Met Trp Ile Thr Gln Cys Phe Leu
1 5 10

<210> 51
<211> 9
<212> PRT
<213> Homo sapiens

<400> 51
Ser Leu Leu Met Trp Ile Thr Gln Cys
1 5

<210> 52
<211> 9
<212> PRT
<213> Homo sapiens

<400> 52
Gln Leu Ser Leu Leu Met Trp Ile Thr
1 5

<210> 53
<211> 10
<212> PRT
<213> Homo sapiens

<220>
<221> UNSURE
<222> (1)..(1)
<223> Xaa = any amino acid

<400> 53
Xaa Glu Ala Asp Pro Thr Gly His Ser Tyr
1 5 10

<210> 54
<211> 945
<212> DNA
<213> Homo sapiens
<400> 54
atgcctcttg agcagaggag tcagcactgc aagcctgaag aaggccttga ggcccgagga 60
gaggccctgg gcctggtggg tgcgcaggct cctgctactg aggagcagga ggctgcctcc 120

```
tcctcttcta ctctagttga agtcaccctg ggggaggtgc ctgctgccga gtcaccagat    180
cctccccaga gtcctcaggg agcctccagc ctccccacta ccatgaacta ccctctctgg    240
agccaatcct atgaggactc cagcaaccaa gaagaggagg ggccaagcac cttccctgac    300
ctggagtccg agttccaagc agcactcagt aggaaggtgg ccgagttggt tcattttctg    360
ctcctcaagt atcgagccag ggagccggtc acaaaggcag aaatgctggg gagtgtcgtc    420
ggaaattggc agtatttctt tcctgtgatc ttcagcaaag cttccagttc cttgcagctg    480
gtctttggca tcgagctgat ggaagtggac cccatcggcc acttgtacat ctttgccacc    540
tgcctgggcc tctcctacga tggcctgctg ggtgacaatc agatcatgcc caaggcaggc    600
ctcctgataa tcgtcctggc cataatcgca agagagggcg actgtgcccc tgaggagaaa    660
atctgggagg agctgagtgt gttagaggtg tttgagggga gggaagacag tatcttgggg    720
gatcccaaga agctgctcac ccaacatttc gtgcaggaaa actacctgga gtaccggcag    780
gtccccggca gtgatcctgc atgttatgaa ttcctgtggg gtccaagggc cctcgttgaa    840
accagctatg tgaaagtcct gcaccatatg gtaaagatca gtggaggacc tcacatttcc    900
tacccacccc tgcatgagtg ggttttgaga gaggggaag agtga                     945
```

<210> 55

<211> 314

<212> PRT

<213> Homo sapiens

<400> 55

```
Met Pro Leu Glu Gln Arg Ser Gln His Cys Lys Pro Glu Glu Gly Leu
1               5                  10                  15
Glu Ala Arg Gly Glu Ala Leu Gly Leu Val Gly Ala Gln Ala Pro Ala
            20                  25                  30
Thr Glu Glu Gln Glu Ala Ala Ser Ser Ser Ser Thr Leu Val Glu Val
        35                  40                  45
Thr Leu Gly Glu Val Pro Ala Ala Glu Ser Pro Asp Pro Pro Gln Ser
    50                  55                  60
Pro Gln Gly Ala Ser Ser Leu Pro Thr Thr Met Asn Tyr Pro Leu Trp
65                  70                  75                  80
Ser Gln Ser Tyr Glu Asp Ser Ser Asn Gln Glu Glu Glu Gly Pro Ser
                85                  90                  95
Thr Phe Pro Asp Leu Glu Ser Glu Phe Gln Ala Ala Leu Ser Arg Lys
            100                 105                 110
Val Ala Glu Leu Val His Phe Leu Leu Leu Lys Tyr Arg Ala Arg Glu
        115                 120                 125
Pro Val Thr Lys Ala Glu Met Leu Gly Ser Val Val Gly Asn Trp Gln
    130                 135                 140
Tyr Phe Phe Pro Val Ile Phe Ser Lys Ala Ser Ser Ser Leu Gln Leu
145                 150                 155                 160
Val Phe Gly Ile Glu Leu Met Glu Val Asp Pro Ile Gly His Leu Tyr
                165                 170                 175
Ile Phe Ala Thr Cys Leu Gly Leu Ser Tyr Asp Gly Leu Leu Gly Asp
            180                 185                 190
Asn Gln Ile Met Pro Lys Ala Gly Leu Leu Ile Ile Val Leu Ala Ile
        195                 200                 205
Ile Ala Arg Glu Gly Asp Cys Ala Pro Glu Glu Lys Ile Trp Glu Glu
    210                 215                 220
Leu Ser Val Leu Glu Val Phe Glu Gly Arg Glu Asp Ser Ile Leu Gly
225                 230                 235                 240
Asp Pro Lys Lys Leu Leu Thr Gln His Phe Val Gln Glu Asn Tyr Leu
```

```
                245                 250                 255
Glu Tyr Arg Gln Val Pro Gly Ser Asp Pro Ala Cys Tyr Glu Phe Leu
            260                 265                 270
Trp Gly Pro Arg Ala Leu Val Glu Thr Ser Tyr Val Lys Val Leu His
        275                 280                 285
His Met Val Lys Ile Ser Gly Gly Pro His Ile Ser Tyr Pro Pro Leu
    290                 295                 300
His Glu Trp Val Leu Arg Glu Gly Glu Glu
305                 310
```

<210> 56

<211> 9

<212> PRT

<213> Homo sapiens

<400> 56

```
Glu Val Asp Pro Ile Gly His Leu Tyr
1               5
```

<210> 57

<211> 16

<212> PRT

<213> Homo sapiens

<400> 57

```
Met Glu Val Asp Pro Ile Gly His Leu Tyr Ile Phe Ala Cys Thr Leu
1               5                   10                  15
```

<210> 58

<211> 9

<212> PRT

<213> Homo sapiens

<400> 58

```
Asp Pro Ile Gly His Leu Tyr Ile Phe
1               5
```

<210> 59

<211> 10

<212> PRT

<213> Homo sapiens

<400> 59

Met Glu Val Asp Pro Ile Gly His Leu Tyr
1 5 10